ABSTRACT

A plurality of methods, computer program product, and apparatus that use a lower 32 bit field of a 64-bit 802.11 TSF timer, so as to encode the reference time instant without the ambiguity as to whether there the reference time is referring to a future time or a past time. According to an aspect of the present invention, the fact that the low order 32 bits of the TSF timer wraps over in about 71 minutes is exploited to remove any ambiguity in the reference times contained in the Schedule Element frame. One method employs an algorithm base on distance between two reference points to determine whether the timer has wrapped around a time period, and another method uses a delay interval or a timeout to determine whether or not the TSF timer is wrapped or unwrapped. Another method includes determining whether an absolute value of X-O is less than, or greater than or equal to maximum value M/2.